WHAT IS CLAIMED IS

1. An optical disk drive comprising:

a light source emitting a light beam to a recordable optical disk by a controlled recording power;

a disk rotation device rotating the disk at a controlled velocity;

an OPC unit performing an optical power calibration OPC prior to a start of recording of the disk by accessing a power calibration area at a predetermined track of the disk with the light beam emitted by the light source while the disk is rotated at a constant linear velocity, the OPC being repeated with one of different recording powers being shifted to another and applied to the light source;

an optimum recording power determining unit determining an optimum recording power for the light source during the recording of the disk based on results of the OPC performed by the OPC unit;

an OPC velocity changing unit changing a highest linear velocity of a number of linear velocities, provided for the disk rotation device, to a next highest linear velocity for the controlled velocity of the disk rotation device during a subsequent OPC;

a detecting unit detecting whether the OPC and the optimum

recording power determination are normally performed after one of the linear velocities is set by the OPC velocity changing unit; and

a rotation speed setting unit setting the controlled velocity of the disk rotation device during the recording to an angular velocity corresponding to said one of the linear velocities at which the OPC and the optimum recording power determination are detected as being normally performed.

2. The optical disk drive of claim 1, wherein the rotation speed setting unit sets an angular velocity of the disk rotation device corresponding to a maximum linear velocity at which the OPC and the optimum recording power determination are detected as being normally performed.

3. The optical disk drive of claim 1, further comprising:

a recording speed control unit controlling the disk rotation device so that the disk is rotated at a constant angular velocity based on the angular velocity set by the rotation speed setting unit;

an emission power computing unit calculating a second

optimum recording power for a linear velocity corresponding to a target track of the disk being recorded, based on the optimum recording power determined by the optimum recording power determining unit; and

a recording power control unit performing the recording of the disk by using a constant angular velocity method based on the second optimum recording power.

4. The optical disk drive of claim 3, further comprising a determination unit determining whether the second optimum recording power, which is calculated by the emission power computing unit, is smaller than a maximum output power of the light source, wherein, when it is determined that the second optimum recording power is not smaller than the maximum output power, the disk rotation device is controlled so that the disk is rotated at a constant linear velocity based on the linear velocity corresponding to the target track of the disk being recorded.

5. The optical disk drive of claim 1, wherein, when it is

determined that the second optimum recording power is not smaller than the maximum output power, the second optimum recording power calculated by the emission power computing unit is set as being equal to the maximum output power of the light source.

6. An optical disk drive in which an information area of a recordable optical disk is divided into a number of zones, and when recording of one of the zones is performed the disk is rotated at a constant linear velocity within the one of the zones, and different linear velocities are allocated to the respective zones of the disk, the optical disk drive comprising:

a light source emitting a light beam to a recordable optical disk by a controlled recording power;

a disk rotation device rotating the disk at a controlled velocity;

an OPC unit performing an optical power calibration OPC prior to a start of recording of the disk by accessing a power calibration area at a predetermined track of the disk with the light beam emitted by the light source while the disk is rotated at a constant linear velocity, the OPC being repeated with one of different recording powers being shifted to another and applied to the light source;

an optimum recording power determining unit determining an optimum recording power for the light source during the recording of the disk based on results of the OPC performed by the OPC unit;

an OPC velocity changing unit changing a highest linear velocity of the linear velocities, provided for the disk rotation device, to a next highest linear velocity for the controlled velocity of the disk rotation device during a subsequent OPC;

a detecting unit detecting whether the OPC and the optimum recording power determination are normally performed after one of the linear velocities is set by the OPC velocity changing unit;

a rotation speed setting unit setting the controlled velocity of the disk rotation device during the recording to a minimum linear velocity, provided for a zone constant linear velocity ZCLV method, at which the OPC and the optimum recording power determination are detected as being normally performed;

a recording speed control unit controlling the disk rotation device so that the disk is rotated at a constant linear velocity based on the minimum linear velocity set by the rotation speed setting unit;

an emission power computing unit calculating a second optimum recording power for a linear velocity corresponding to a target zone of the disk being recorded, based on the optimum recording power determined by the optimum recording power determining unit; and

a recording power control unit performing the recording of the

disk by using a constant linear velocity CLV method based on the second optimum recording power.

7. The optical disk drive of claim 6, wherein the rotation speed setting unit sets the minimum linear velocity provided for the ZCLV method, based on a maximum linear velocity at which the OPC and the optimum recording power determination are detected as being normally performed.

8. The optical disk drive of claim 6, further comprising a determination unit determining whether the second optimum recording power, which is calculated by the emission power computing unit, is smaller than a maximum output power of the light source, wherein, when it is determined that the second optimum recording power is not smaller than the maximum output power, the disk rotation device is controlled so that the disk is rotated at a constant linear velocity based on the linear velocity corresponding to the target zone of the disk being recorded.

9. The optical disk drive of claim 1, wherein respective OPC linear velocities corresponding to specific media makers are stored into a memory of the disk drive, the optical disk drive further comprising a maker detecting unit detecting a maker of the disk from a pre-recorded maker identifier of the disk, wherein the OPC velocity changing unit sets a corresponding one of the stored OPC linear velocities for the detected maker as being the controlled velocity of the disk rotation unit for the subsequent OPC.

10. The optical disk drive of claim 9, wherein the maker detecting unit detects a type of the disk in addition to the maker of the disk, and the respective OPC linear velocities corresponding to specific optical disk types are stored in the memory, and each predetermined OPC linear velocity is provided such that the OPC and the optimum recording power determination are always normally performed.

11. The optical disk drive of claim 9, wherein the maker detecting unit detects a storage capacity of the disk in addition to

the maker of the disk, and the respective OPC linear velocities corresponding to specific optical disk storage capacities are stored in the memory, and each predetermined OPC linear velocity is provided such that the OPC and the optimum recording power determination are always normally performed.

12. An optical recording control method which controls an optical disk drive, the optical disk drive including a light source emitting a light beam to a recordable optical disk by a controlled recording power, and a disk rotation device rotating the disk at a controlled velocity, the optical recording control method comprising the steps of:

performing an optical power calibration OPC prior to a start of recording of the disk by accessing a power calibration area at a predetermined track of the disk with the light beam emitted by the light source while the disk is rotated at a constant linear velocity, the OPC being repeated with one of different recording powers being shifted to another and applied to the light source;

determining an optimum recording power for the light source during the recording of the disk based on results of the OPC;

changing a highest linear velocity of a number of linear velocities, provided for the disk rotation device, to a next highest

linear velocity for the controlled velocity of the disk rotation device during a subsequent OPC;

detecting whether the OPC and the optimum recording power determination are normally performed after one of the linear velocities is set in the OPC velocity changing step; and

setting the controlled velocity of the disk rotation device during the recording to an angular velocity corresponding to said one of the linear velocities at which the OPC and the optimum recording power determination are detected as being normally performed.

13. The optical recording control method of claim 12, wherein the angular velocity, set by the rotation speed setting step, corresponds to a maximum linear velocity at which the OPC and the optimum recording power determination are detected as being normally performed.

14. The optical recording control method of claim 12, further comprising the steps of:

controlling the disk rotation device so that the disk is rotated at a constant angular velocity based on the angular velocity set by the rotation speed setting step;

calculating a second optimum recording power for a linear velocity corresponding to a target track of the disk being recorded, based on the optimum recording power determined by the optimum recording power determining step; and

a recording power control unit performing the recording of the disk by using a constant angular velocity method based on the second optimum recording power.

15. The optical recording control method of claim 14, further comprising the step of determining whether the second optimum recording power, which is calculated by the emission power computing unit, is smaller than a maximum output power of the light source, wherein, when it is determined that the second optimum recording power is not smaller than the maximum output power, the disk rotation device is controlled so that the disk is rotated at a constant linear velocity based on the linear velocity corresponding to the target track of the disk being recorded.

16. The optical recording control method of claim 15, wherein, when it is determined that the second optimum recording power is not smaller than the maximum output power, the second optimum recording power calculated by the emission power computing step is set as being equal to the maximum output power of the light source.

17. An optical recording control method which controls an optical disk drive, the optical disk drive including a light source emitting a light beam to a recordable optical disk by a controlled recording power, and a disk rotation device rotating the disk at a controlled velocity, wherein an information area of a recordable optical disk is divided into a number of zones, and when recording of one of the zones is performed the disk is rotated at a constant linear velocity within the one of the zones, and different linear velocities are allocated to the respective zones of the disk, the optical recording control method comprising the steps of:

performing an optical power calibration OPC prior to a start of recording of the disk by accessing a power calibration area at a predetermined track of the disk with the light beam emitted by the light source while the disk is rotated at a constant linear velocity, the OPC being repeated with one of different recording powers being shifted to another and applied to the light source;

determining an optimum recording power for the light source during the recording of the disk based on results of the OPC performed by the OPC unit;

changing a highest linear velocity of the linear velocities, provided for the disk rotation device, to a next highest linear velocity for the controlled velocity of the disk rotation device during a subsequent OPC;

detecting whether the OPC and the optimum recording power determination are normally performed after one of the linear velocities is set by the changing step;

setting the controlled velocity of the disk rotation device during the recording to a minimum linear velocity, provided for a zone constant linear velocity ZCLV method, at which the OPC and the optimum recording power determination are detected as being normally performed;

controlling the disk rotation device so that the disk is rotated at a constant linear velocity based on the minimum linear velocity set by the rotation speed setting step;

calculating a second optimum recording power for a linear velocity corresponding to a target zone of the disk being recorded, based on the optimum recording power determined by the determining step; and

performing the recording of the disk by using a constant linear velocity CLV method based on the second optimum recording power.

18. The optical recording control method of claim 17, wherein in the setting step, the minimum linear velocity provided for the ZCLV method is set based on a maximum linear velocity at which the OPC and the optimum recording power determination are detected as being normally performed.

19. The optical recording control method of claim 17, further comprising the step of determining whether the second optimum recording power, obtained by the calculating step, is smaller than a maximum output power of the light source, wherein, when it is determined that the second optimum recording power is not smaller than the maximum output power, the disk rotation device is controlled so that the disk is rotated at a constant linear velocity based on the linear velocity corresponding to the target zone of the disk being recorded.

20. The optical recording control method of claim 12, wherein respective OPC linear velocities corresponding to specific media makers are stored into a memory of the disk drive, the optical

recording control method further comprising the step of detecting a maker of the disk from a pre-recorded maker identifier of the disk, and, in the changing step, the controlled velocity of the disk rotation unit for the subsequent OPC is set to a corresponding one of the stored OPC linear velocities for the detected maker.

21. The optical recording control method of claim 20, wherein the maker detecting step detects a type of the disk in addition to the maker of the disk, and the respective OPC linear velocities corresponding to specific optical disk types are stored in the memory, and each predetermined OPC linear velocity is provided such that the OPC and the optimum recording power determination are always normally performed.

22. The optical recording control method of claim 20, wherein the maker detecting step detects a storage capacity of the disk in addition to the maker of the disk, and the respective OPC linear velocities corresponding to specific optical disk storage capacities are stored in the memory, and each predetermined OPC linear

velocity is provided such that the OPC and the optimum recording power determination are always normally performed.

23. A data processing apparatus in which an optical disk drive is provided, the optical disk drive comprising:

a light source emitting a light beam to a recordable optical disk by a controlled recording power;

a disk rotation device rotating the disk at a controlled velocity;

an OPC unit performing an optical power calibration OPC prior to a start of recording of the disk by accessing a power calibration area at a predetermined track of the disk with the light beam emitted by the light source while the disk is rotated at a constant linear velocity, the OPC being repeated with one of different recording powers being shifted to another and applied to the light source;

an optimum recording power determining unit determining an optimum recording power for the light source during the recording of the disk based on results of the OPC performed by the OPC unit;

an OPC velocity changing unit changing a highest linear velocity of a number of linear velocities, provided for the disk rotation device, to a next highest linear velocity for the controlled

velocity of the disk rotation device during a subsequent OPC;

a detecting unit detecting whether the OPC and the optimum recording power determination are normally performed after one of the linear velocities is set by the OPC velocity changing unit; and

a rotation speed setting unit setting the controlled velocity of the disk rotation device during the recording to an angular velocity corresponding to said one of the linear velocities at which the OPC and the optimum recording power determination are detected as being normally performed.